

**INDUCTION OF GENETIC VARIABILITIES IN SOME  
MORPHOLOGICAL AND YIELD COMPONENT CHARACTERS OF  
FABA BEAN (*Vicia faba L.*) BY GAMMA RAYS  
BY**

**Abdel-Sabour, M.S.; Hassan, A.M.; Sherif, H.S.; El-Shawaf, I.I.  
and Sherin G. Abbas**  
Faculty of Agric, Moshtohor, Zagazig Univ. Benha Branch Egypt.

**ABSTRACT**

This study concerns the induction of genetic variabilities in some morphological and yield component characters in faba bean (*Vicia faba L.*) by gamma rays. Five varieties of faba bean were used in this study with four different doses of gamma rays, 5, 10, 20 and 30 K rad. Nine characters were studied in both M1 and M2 plants.

Data revealed that the increase of gamma rays doses has a significant negative effect on the M1 seed germination in all the treated cultivars. However in M2 seed there is no effect. Concerning the shoot length, data showed that gamma rays had a significant positive effect at the most used doses for M1 plants, while in M2 plants the effect was negative. For the other characters, most results of M1 plants showed that 5 K rad dose had a positive effect as compared to the control. While at the other doses the effect ranged between negative and no effects.

**INTRODUCTION**

Faba bean (*Vicia faba L.*) is considered one of the most important legume crop in Egypt and many other countries for its nutritional value as a protein source for human, animal feeding and other uses.

Improving of the beneficial characters, requires a great range of genetic variabilities which can be increased by induction of mutation, either physically by irradiation or chemically by using chemical mutagens.

Gamma radiation is an important method of inducing mutation or genetic variabilities. Then selection of the beneficial mutations or characters could be practiced especially in the species in which natural variation is not large (Badr, 1968; Abd El-Rassoul, 1970; Bohac and Hudec, 1972 and Filippetti and Marzano, 1984).